EXHIBIT HH

TO DECLARATION OF S. MERRILL WEISS IN SUPPORT OF PLAINTIFF ACACIA MEDIA TECHNOLOGIES CORPORATION'S MEMORANDUM OF POINTS AND AUTHORITIES IN OPPOSITION TO ROUND 3 DEFENDANTS' MOTION FOR SUMMARY JUDGMENT OF INVALIDITY UNDER 35 U.S.C. § 112 OF THE '992, '863, AND '702 PATENTS; AND SATELLITE DEFENDANTS' MOTION FOR SUMMARY JUDGMENT OF INVALIDITY OF THE '992, '863, AND '720 PATENTS

Hovsepian v. Apple, Inc. Doc. 325 Att. 35

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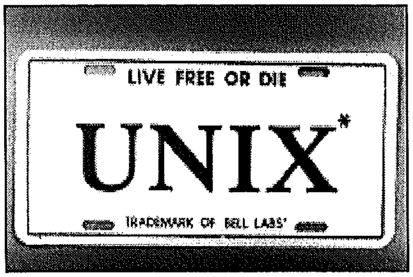
1969

- The RS-232-C standard for communication permitted computers and peripheral devices to transmit information serially — that is, one bit at a time. The RS-232-C protocol spelled out a purpose for a serial plug´s 25 connector pins.



UNIX "license plate"

- AT&T Bell Laboratories programmers Kenneth Thompson and Dennis Ritchie developed the UNIX operating system on a spare DEC minicomputer. UNIX combined many of the timesharing and file management features offered by Multics, from which it took its name. (Multics, a projects of the mid-1960s, represented the first effort at creating a multi-user, multi-tasking operating system.) The UNIX operating system quickly secured a wide following, particularly among engineers and scientists.

1972

- Nolan Bushnell introduced Pong and his new company, Atari video games.

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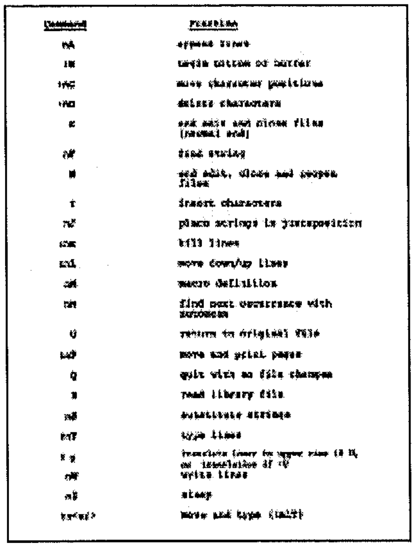
1976



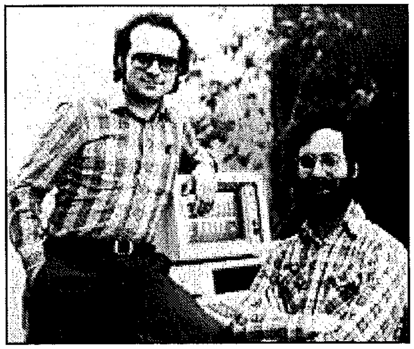
CP/MCP/M

- Gary Kildall developed CP/M, an operating system for personal computers. Widely adopted, CP/M made it possible for one version of a program to run on a variety of computers built around eight-bit microprocessors.

1977

- The U.S. government adopted IBM's data encryption standard, the key to unlocking coded messages, to protect confidentiality within its agencies. Available to the general public as well, the standard required an eight-number key for scrambling and unscrambling data. The 70 quadrillion possible combinations made breaking the code by trial and error unlikely.

1979



Bob Frankston and Dan Brinklin

- Harvard MBA candidate Daniel Bricklin and programmer Robert Frankston developed VisiCalc, the program that made a business machine of the personal computer, for the Apple II. VisiCalc (for **Visi**ble **Calc**ulator) automated the recalculation of spreadsheets. A huge success, more than 100,000 copies sold in one year.

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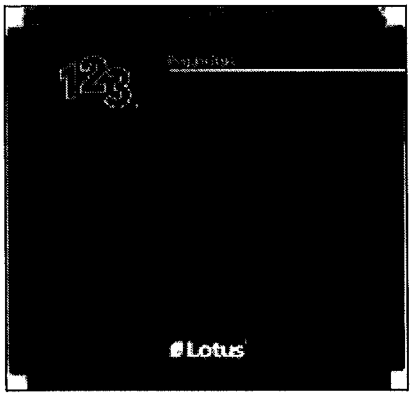
The MS-DOS, or Microsoft Disk Operating System, the basic software for the newly released IBM PC, established a long partnership between IBM and Microsoft, which Bill Gates and Paul Allen had founded only six years earlier.

1982



Lotus 1-2-3

- Mitch Kapor developed Lotus 1-2-3, writing the software directly into the video system of the IBM PC. By bypassing DOS, it ran much faster than its competitors. Along with the immense popularity of the IBM's computer, Lotus owed much of its success to its working combination of spreadsheet capabilities with graphics and data retrieval capabilities.

  Kapor, who received his bachelor's degree in an individually designed cybernetics major from Yale University in 1971, started Lotus Development Corp. to market his spreadsheet and served as its president and CEO from 1982 to 1986. He also has worked to develop policies that maximize openness and competitiveness in the computer industry.

1983

- Microsoft announced Word, originally called Multi-Tool Word, and Windows. The latter doesn't ship until 1985, although the company said it would be on track for an April 1984 release. In a marketing blitz, Microsoft distributed 450,000 disks demonstrating its Word program in the November issue of PC World magazine.

- Aldus announced its PageMaker program for use on Macintosh computers, launching an interest in desktop publishing. Two years later, Aldus released a version for IBMs and IBM-compatible computers. Developed by Paul Brainerd, who founded Aldus Corp., PageMaker allowed users to combine graphics and text easily enough to make desktop publishing practical.

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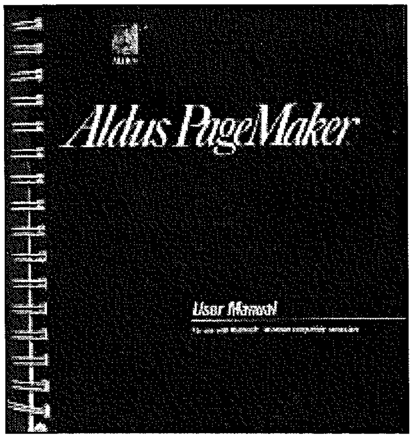

Aldus PageMaker

Chuck Geschke of Adobe Systems Inc., a company formed in 1994 by the merger of Adobe and Aldus, remembered: *"John Sculley, a young fellow at Apple, got three groups together — Aldus, Adobe, and Apple — and out of that came the concept of desktop publishing. Paul Brainerd of Aldus is probably the person who first uttered the phrase. All three companies then took everybody who could tie a tie and speak two sentences in a row and put them on the road, meeting with people in the printing and publishing industry and selling them on this concept. The net result was that it turned around not only the laser printer but, candidly, Apple Computer. It really turned around that whole business.*

- The C++ programming language emerged as the dominant object-oriented language in the computer industry when Bjarne Stroustrup published "The C++ Programming Language." Stroustrup, at AT&T Bell Laboratories, said his motivation stemmed from a desire to write event-driven simulations that needed a language faster than Simula. He developed a preprocessor that allowed Simula style programs to be implemented efficiently in C.

  Stroustrup wrote in the preface to "The C++ Programming Language": *"C++ is a general purpose programming language designed to make programming more enjoyable for the serious programmer. Except for minor details, C++ is a superset of the C programming language. In addition to the facilities provided by C, C++ provides flexible and efficient facilities for defining new types.... The key concept in C++ is class. A class is a user-defined type. Classes provide data hiding, guaranteed initialization of data, implicit type conversion for user-defined types, dynamic typing, user-controlled memory management, and mechanisms for overloading operators.... C++ retains C's ability to deal efficiently with the fundamental objects of the hardware (bits, bytes, words, addresses, etc.). This allows the user-defined types to be implemented with a pleasing degree of efficiency."*

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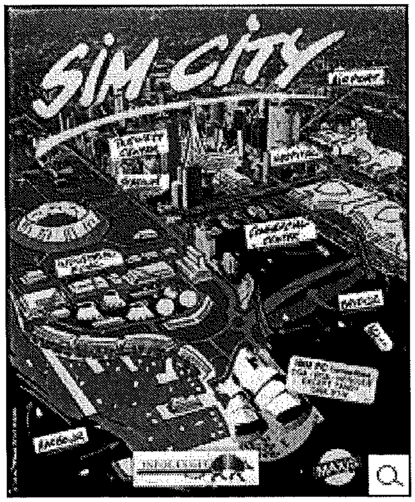
1987

- Apple engineer William Atkinson designed HyperCard, a software tool that simplifies development of in-house applications. HyperCard differed from previous programs of its sort because Atkinson made it interactive rather than language-based and geared it toward the construction of user interfaces rather than the processing of data. In HyperCard, programmers built stacks with the concept of hypertext links between stacks of pages. Apple distributed the program free with Macintosh computers until 1992.

  Hypercard users could look through existing HyperCard stacks as well as add to or edit the stacks. As a stack author, a programmer employed various tools to create his own stacks, linked together as a sort of slide show. At the lowest level, the program linked cards sequentially in chronological ordered, but the HyperTalk programming language allowed more sophisticated links.

1989



Box Art for SimCity

- Maxis released SimCity, a video game that helped launch of series of simulators. Maxis cofounder Will Wright built on his childhood interest in plastic models of ships and airplanes, eventually starting up a company with Jeff Braun and designing a computer program that allowed the user to create his own city. A number of other Sims followed in the series, including SimEarth, SimAnt, and SimLife.

  In SimCity, a player starts with an untouched earth. As the mayor of a city or city planner, he creates a landscape and then constructs buildings, roads, and waterways. As the city grows, the mayor must provide basic services like health care and education, as well as making decisions about where to direct money and how to build a revenue base. Challenges come in the form of natural disasters, airplane crashes, and monster attacks.

- Microsoft shipped Windows 3.0 on May 22. Compatible with DOS programs, the first successful

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version of Windows finally offered good enough performance to satisfy PC users. For the new version, Microsoft revamped the interface and created a design that allowed PCs to support large graphical applications for the first time. It also allowed multiple programs to run simultaneously on its Intel 80386 microprocessor.

Microsoft released Windows amid a $10 million publicity blitz. In addition to making sure consumers knew about the product, Microsoft lined up a number of other applications ahead of time that ran under Windows 3.0, including versions of Microsoft Word and Microsoft Excel. As a result, PCs moved toward the user-friendly concepts of the Macintosh, making IBM and IBM-compatible computers more popular.

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